

F I G. 1 PRIOR ART

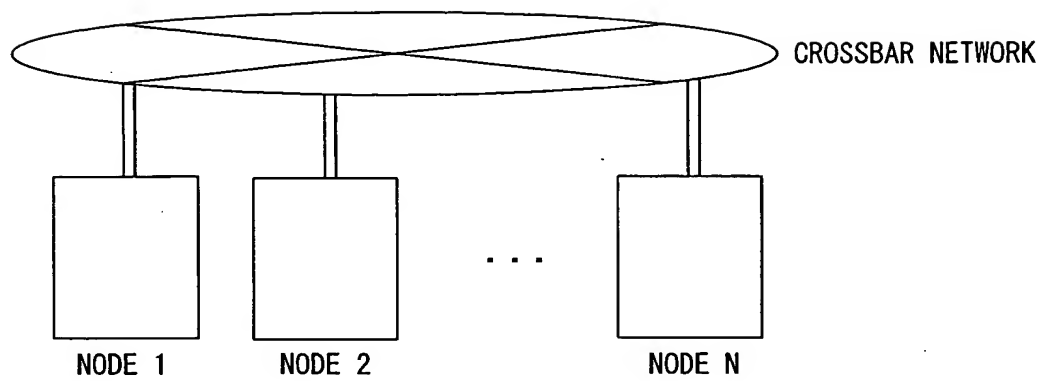


FIG. 2A

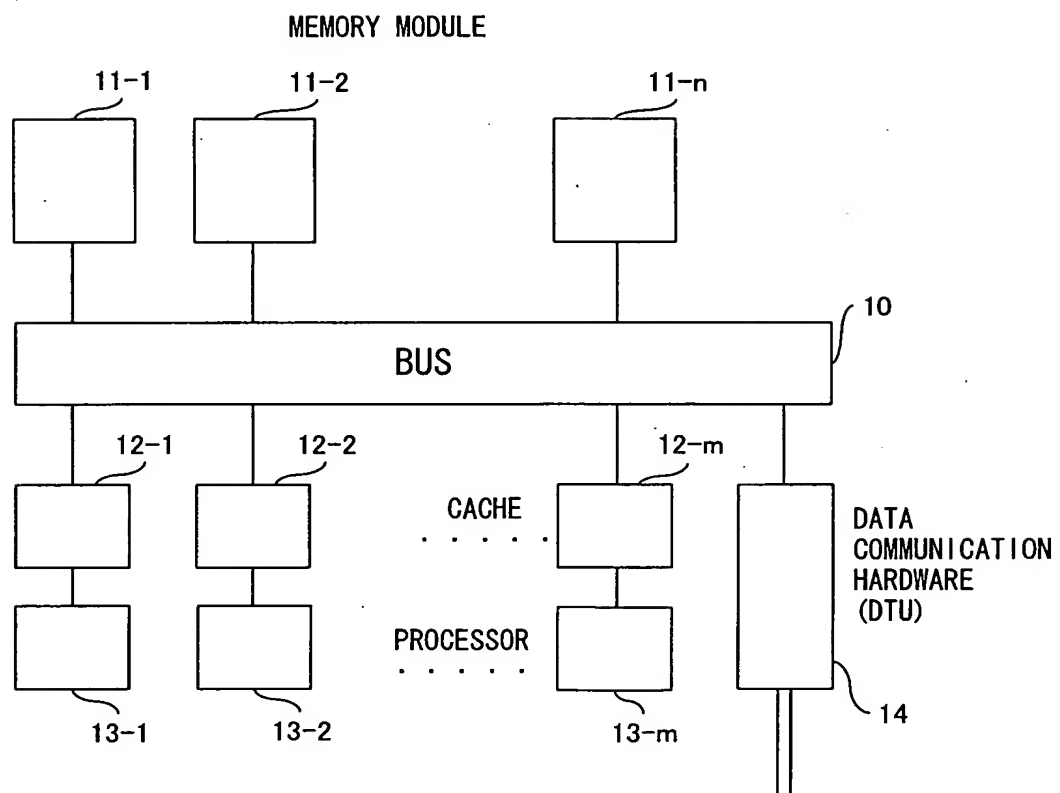


FIG. 2B

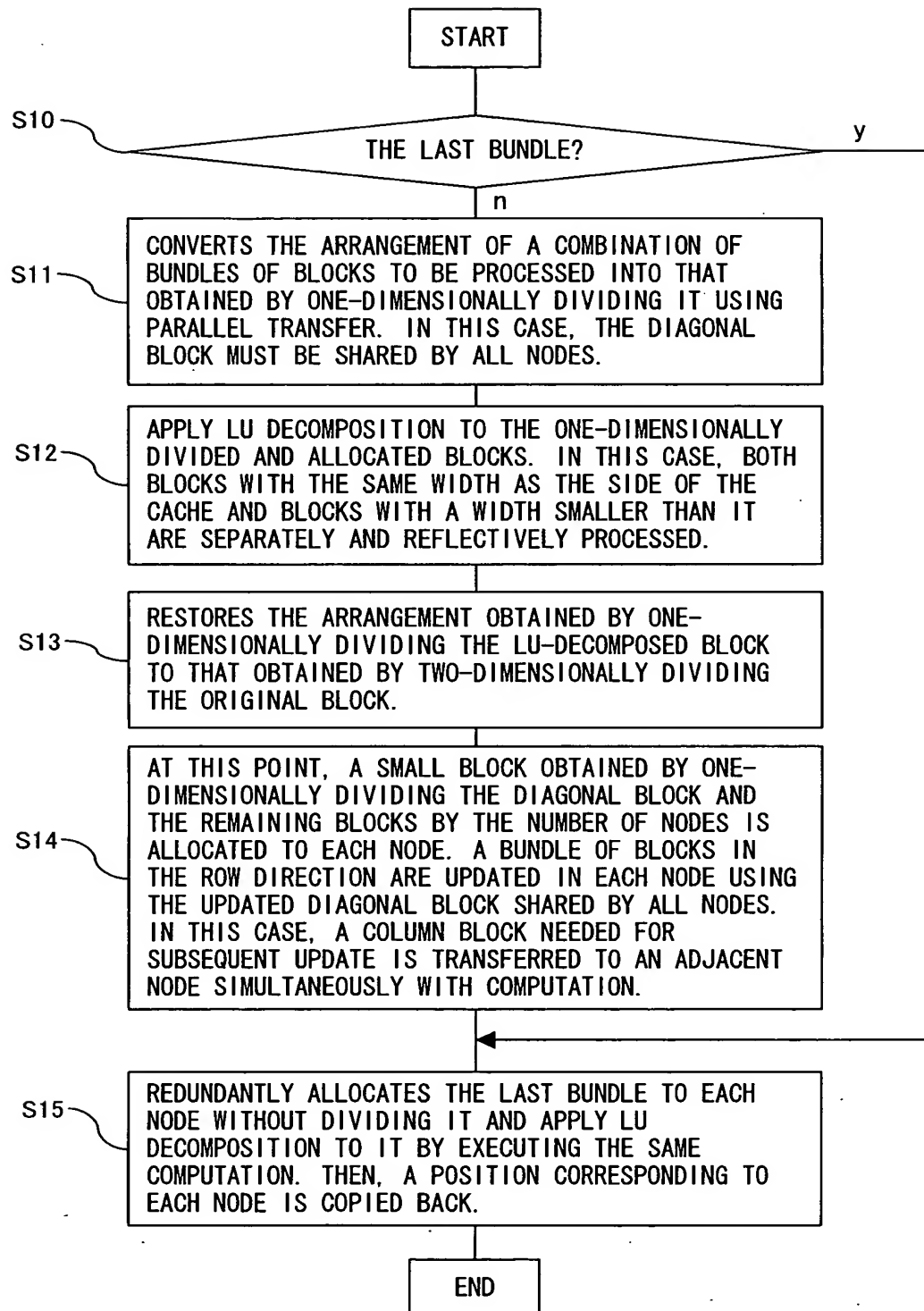
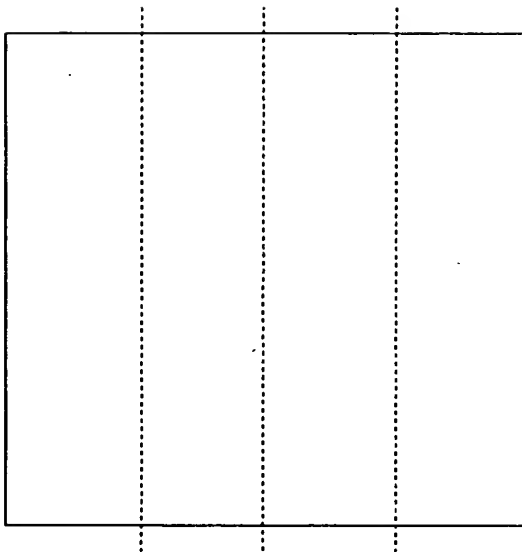
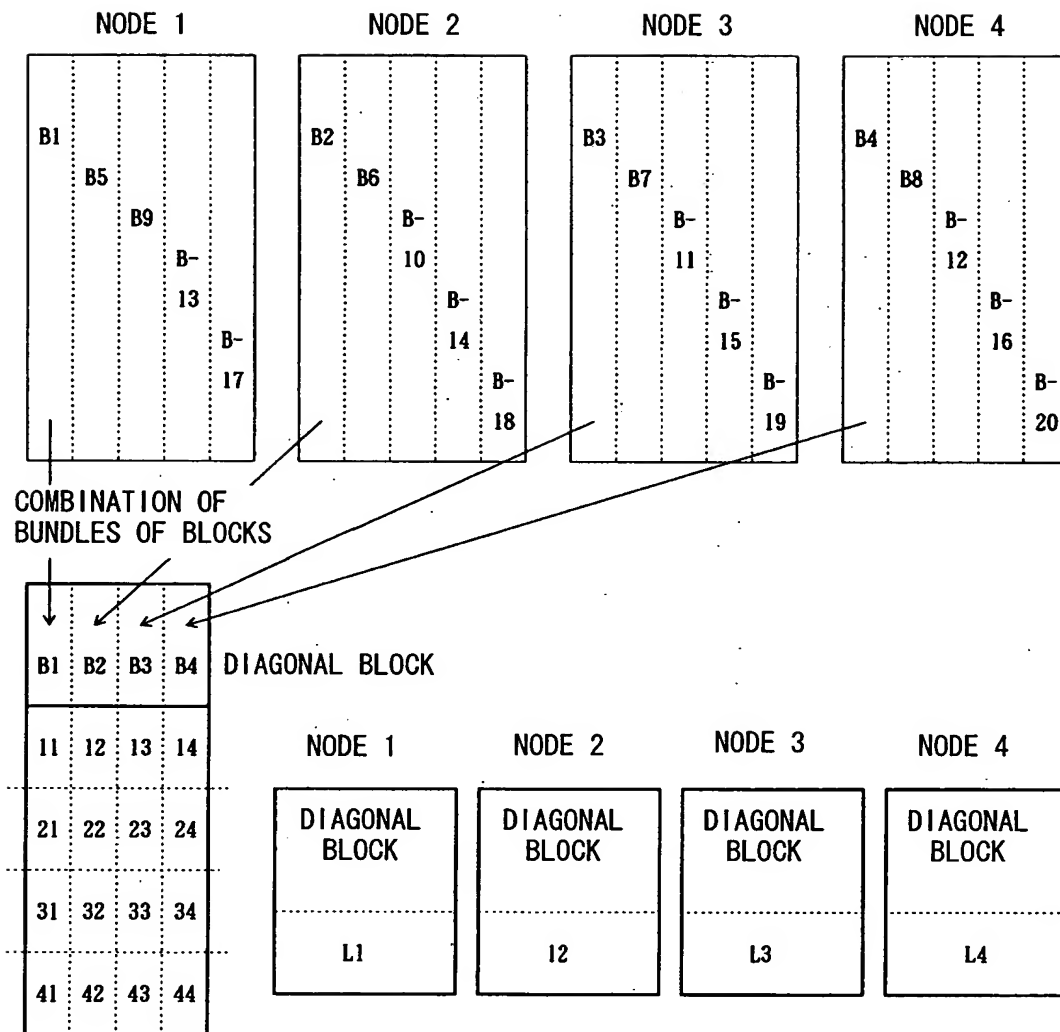


FIG. 3



F I G. 4



F I G. 5

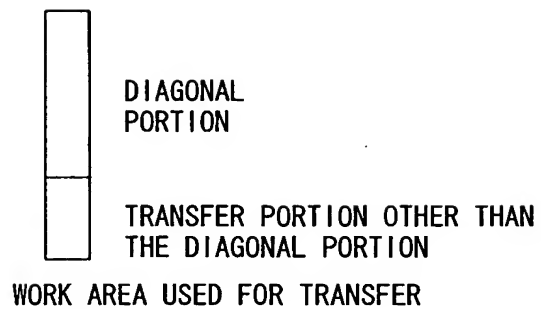
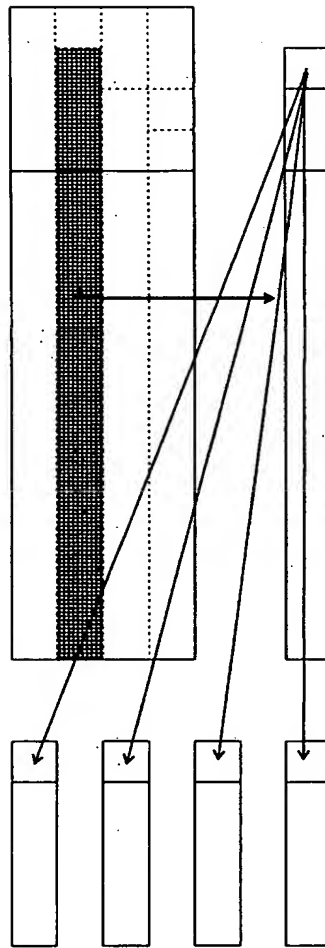
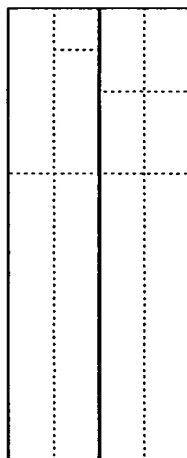


FIG. 6

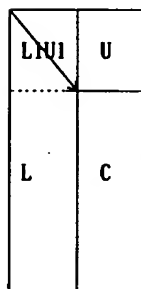


 SHARED WORK AREA

FIG. 7

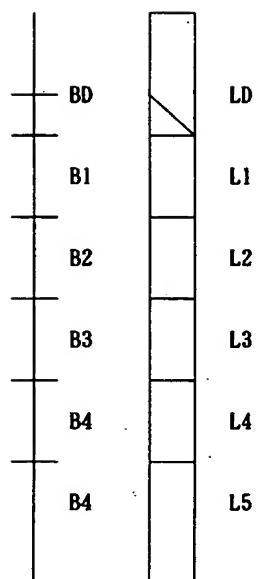


**F I G. 8 A**



**F I G. 8 B**





**F I G. 9**

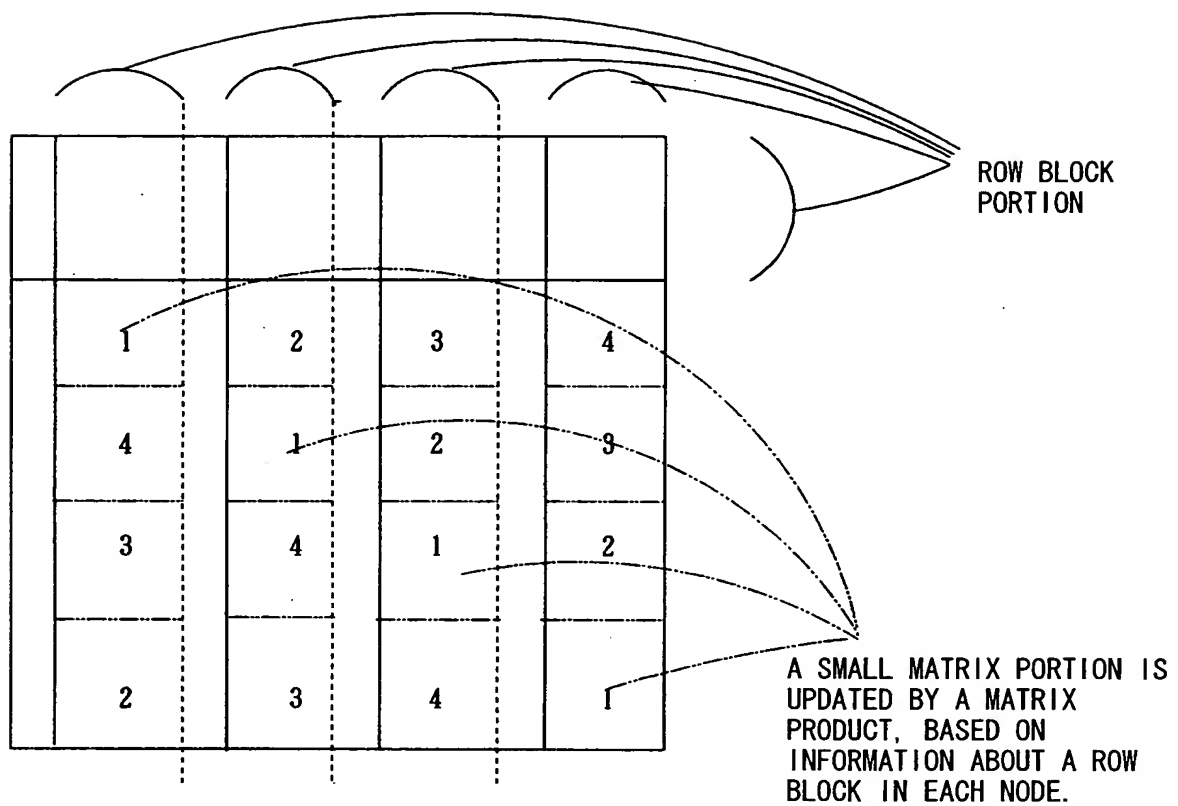


FIG. 10

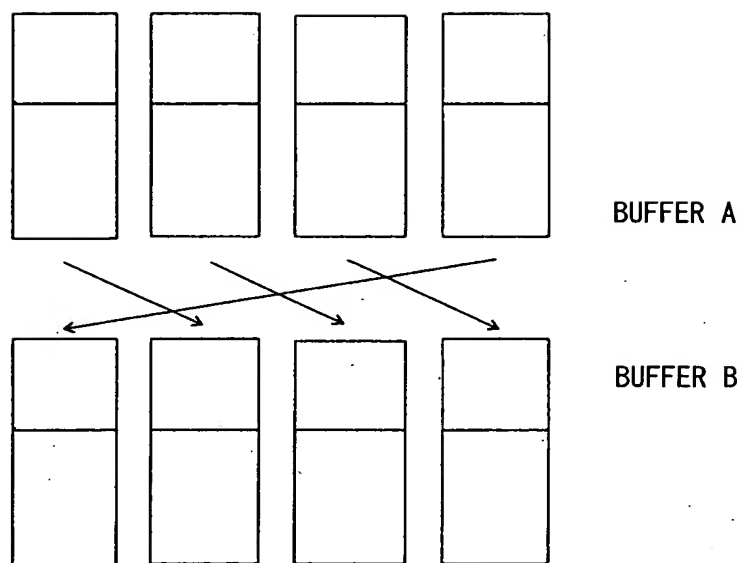
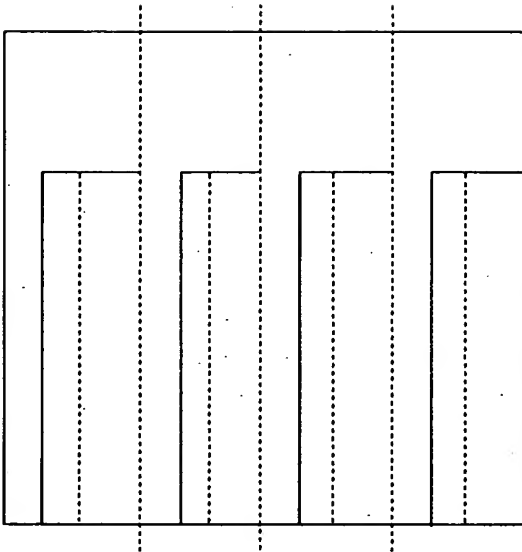


FIG. 11



F I G. 1 2

LU DECOMPOSITION (THE SIZE OF A PROBLEM TO BE SOLVED IS  $n = \text{ibksunit} \times \text{numnord} \times m$ , ASSUMING THAT THE NUMBER OF UNIT BLOCKS AND THE NUMBER OF NODES THE NUMBER OF UNIT BLOCKS ARE  $\text{ibksunit}$   $\text{numnord}$ , AND  $m$  RESPECTIVELY). EACH NODE RECEIVES  $\text{ip}(n)$  STORING COMMON MEMORY AREA  $A(k, n/\text{numnord})$  ( $k \geq n$ ) OBTAINED BY TWO-DIMENSIONALLY AND EQUALLY A COEFFICIENT MATRIX AND THE HISTORY OF ROW REPLACEMENT ARGUMENTS.

S20 SET A PROCESS NUMBER (1 THROUGH NUMBER OF NODES) IN  $\text{nonord}$ .  
SET THE NUMBER OF NODES (TOTAL NUMBER OF PROCESSES)  
IN  $\text{numnord}$ .

S21 GENERATE THREADS IN EACH NODE. SET A THREAD NUMBER EACH  
NODE AND THE TOTAL NUMBER OF THREADS IN  $\text{nothrd}$  AND  
 $\text{numthrd}$ , RESPECTIVELY.

S22 SET BLOCK WIDTH  $\text{ibksmacro} = \text{ibksunit} \times \text{numnord}$ ,  
 $\text{loop} = n / (\text{ibksunit} \times \text{numthrd}) - 1$  (NUMBER OF REPETITIONS),  
 $i = 1$  AND  $\text{lenbufmax} = (n - \text{ibksmacro}) / \text{numnord} + \text{ibksmacro}$ .

S23 SECURE THE FOLLOWING WORK AREAS.  
 $\text{wlu1}(\text{lenbufmax}, \text{ibksmacro})$ ,  $\text{wlu2}(\text{lenbufmax}, \text{ibksmacro})$ ,  
 $\text{bufs}(\text{lenbufmax}, \text{ibksunit})$ ,  $\text{bufd}(\text{lenbufmax}, \text{ibksunit})$ .  
A SUB-ROUTINE COMPUTES ACTUAL LENGTH  $\text{lenbuf}$  AT EACH TIME  
OF EXECUTION AND USES THE NECESSARY SIZE OF THIS AREA.

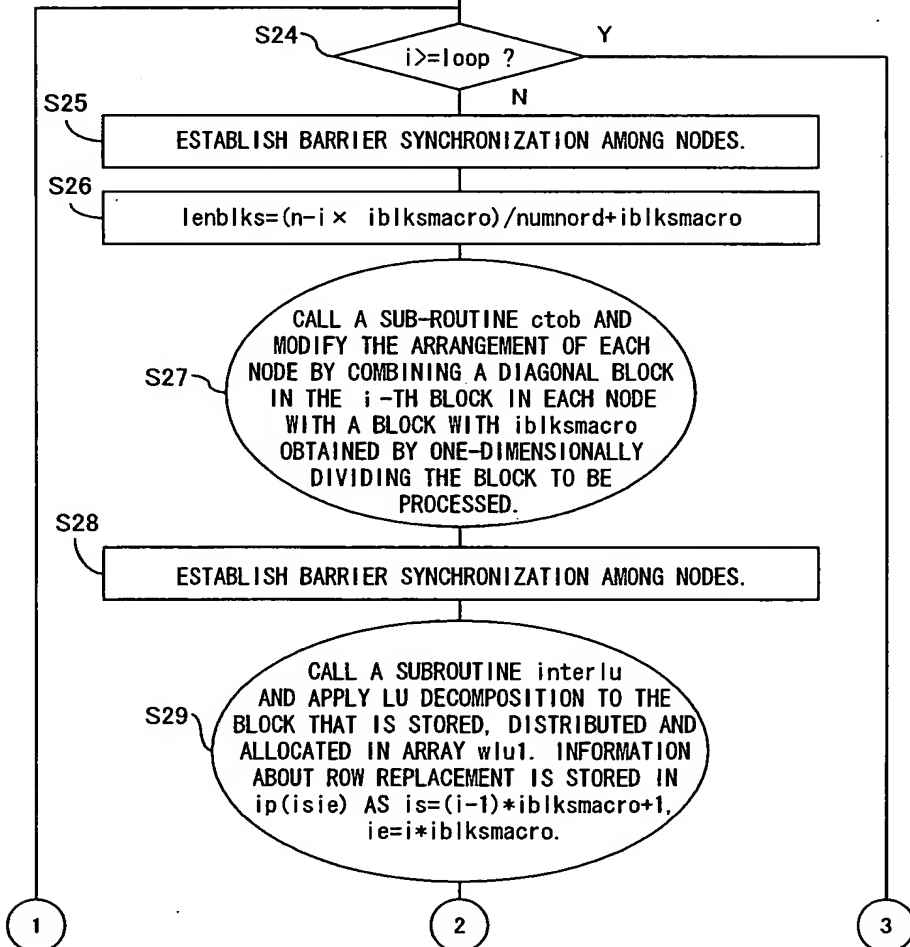


FIG. 13

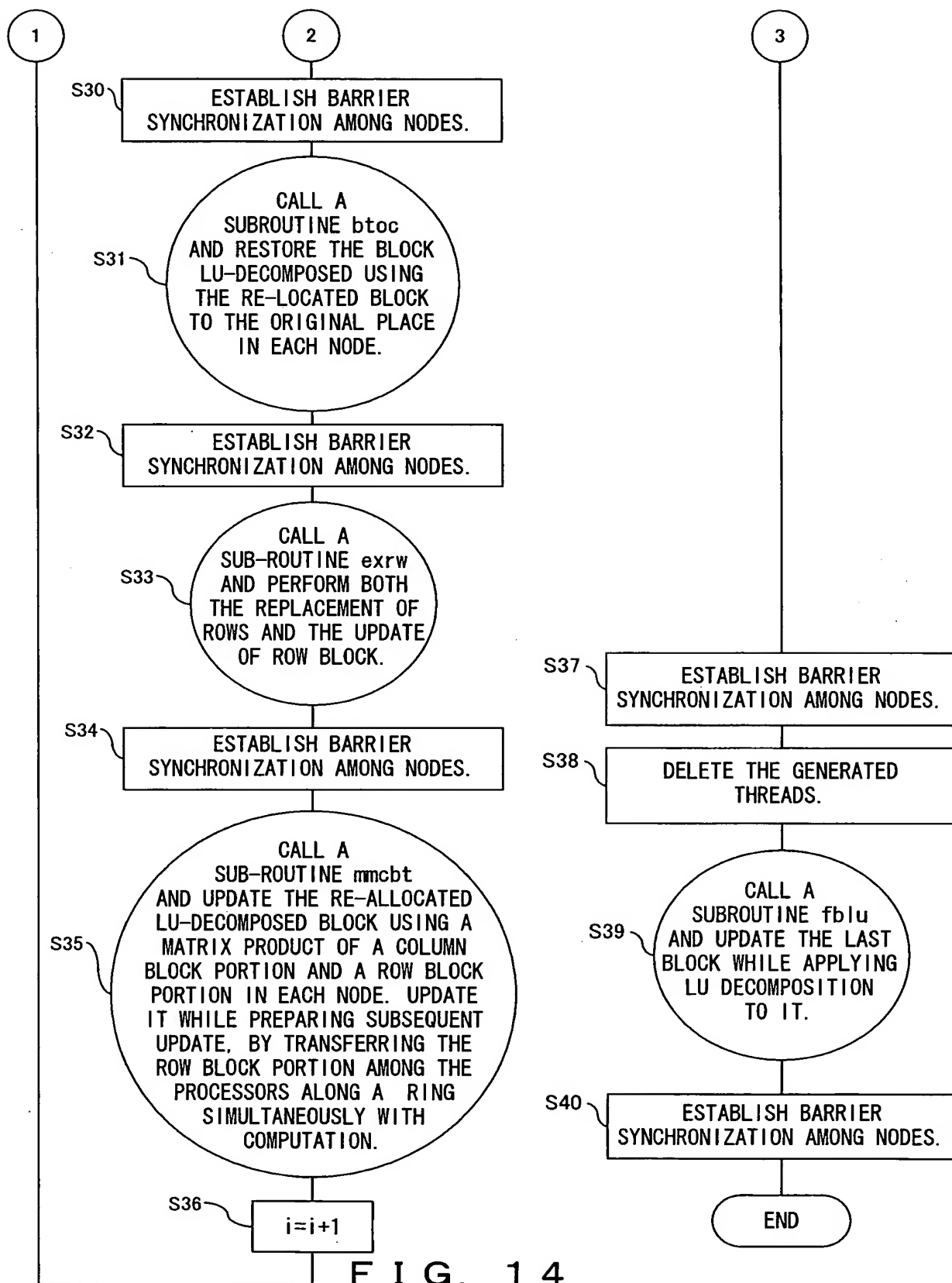


FIG. 14

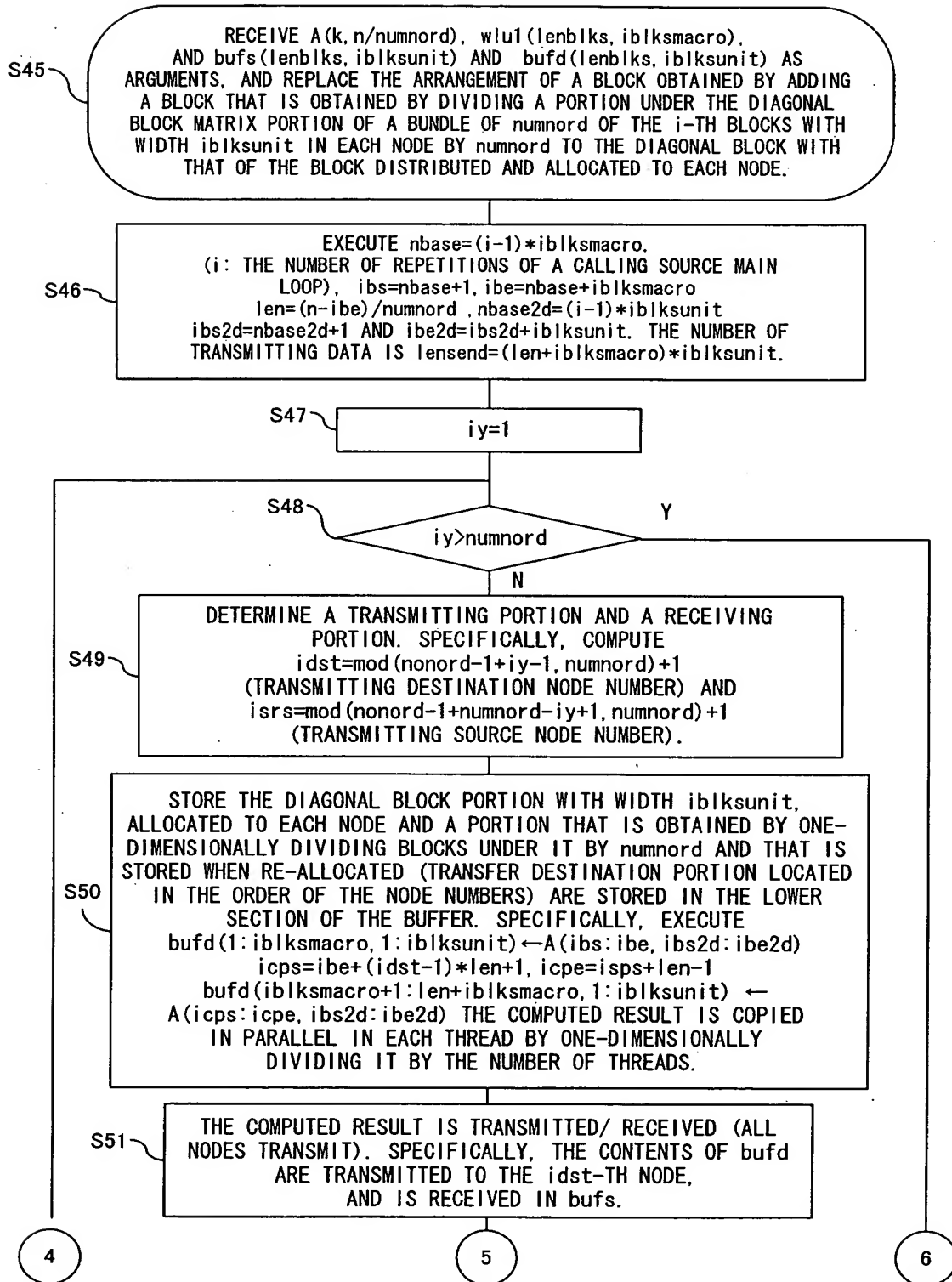


FIG. 15

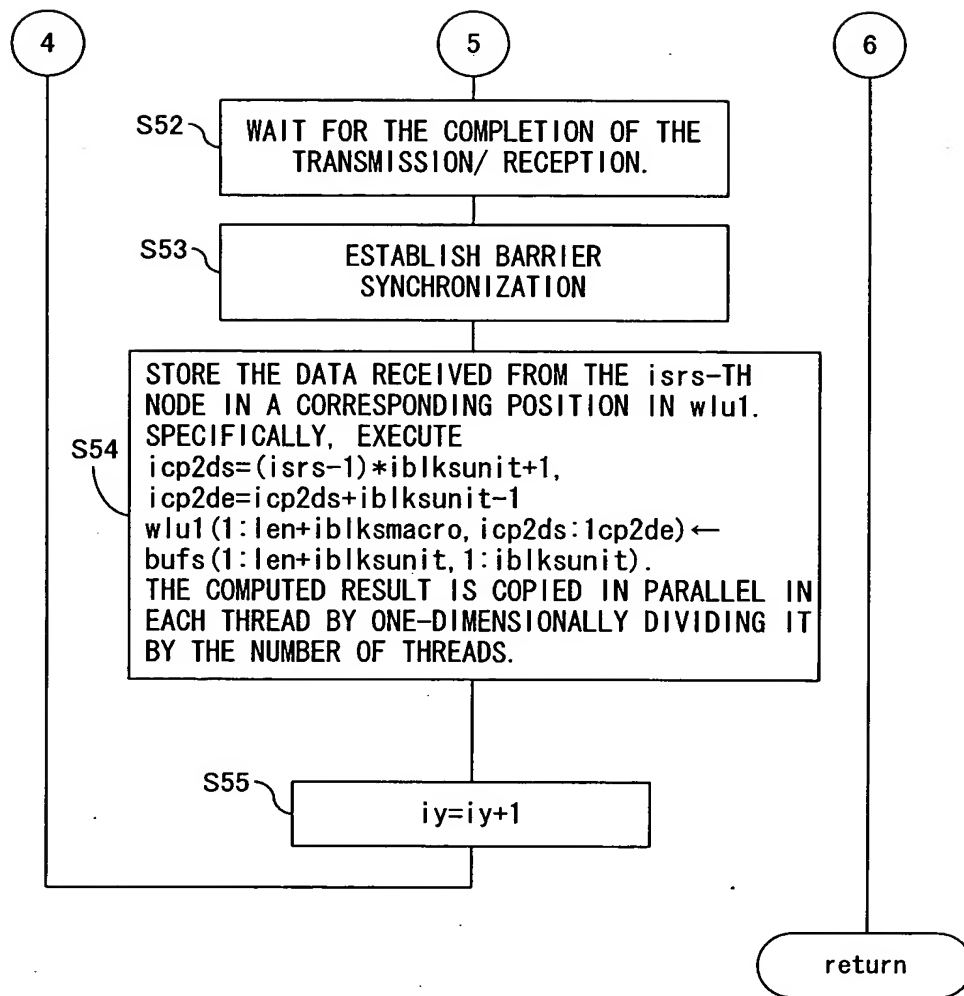


FIG. 16



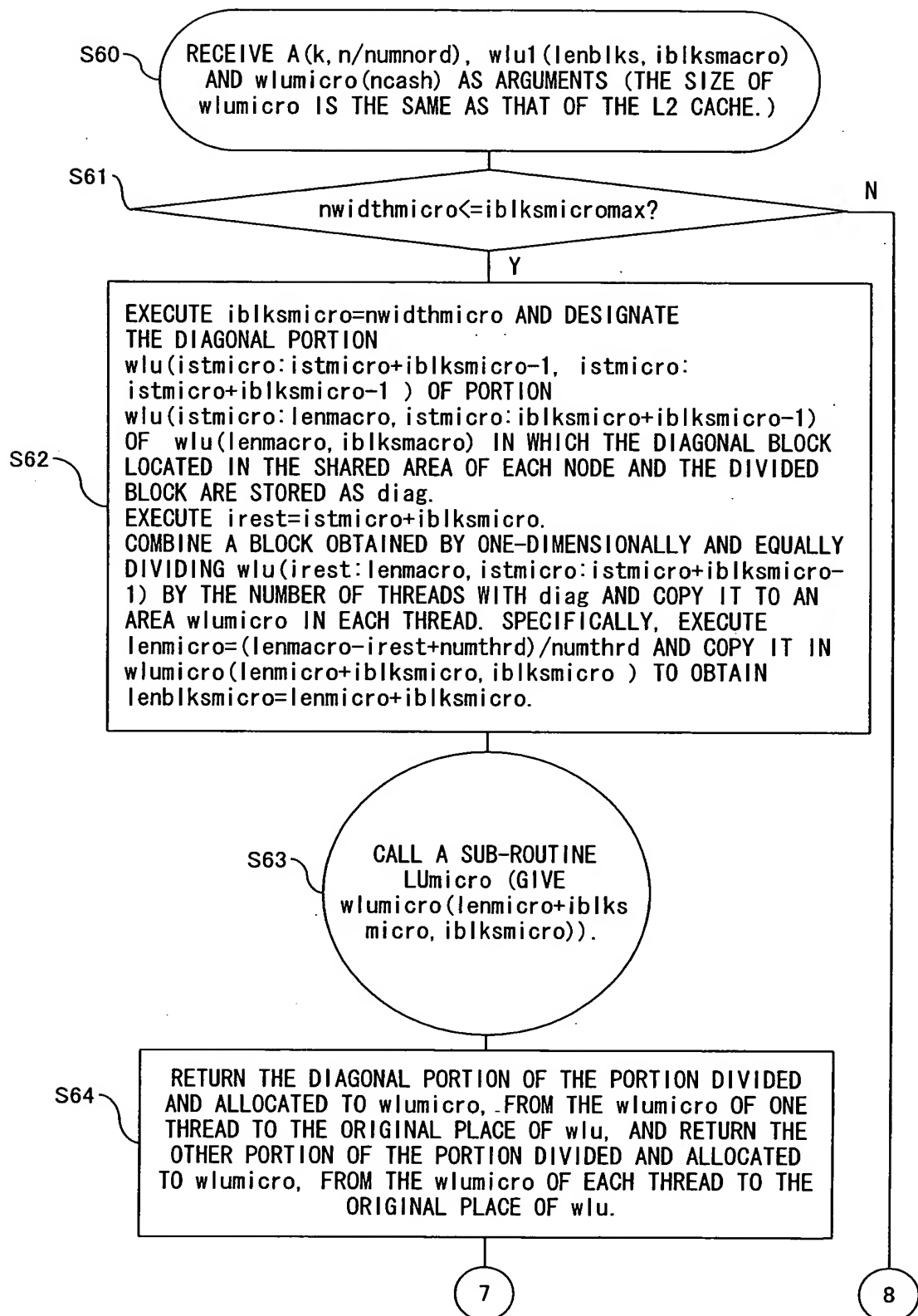


FIG. 17

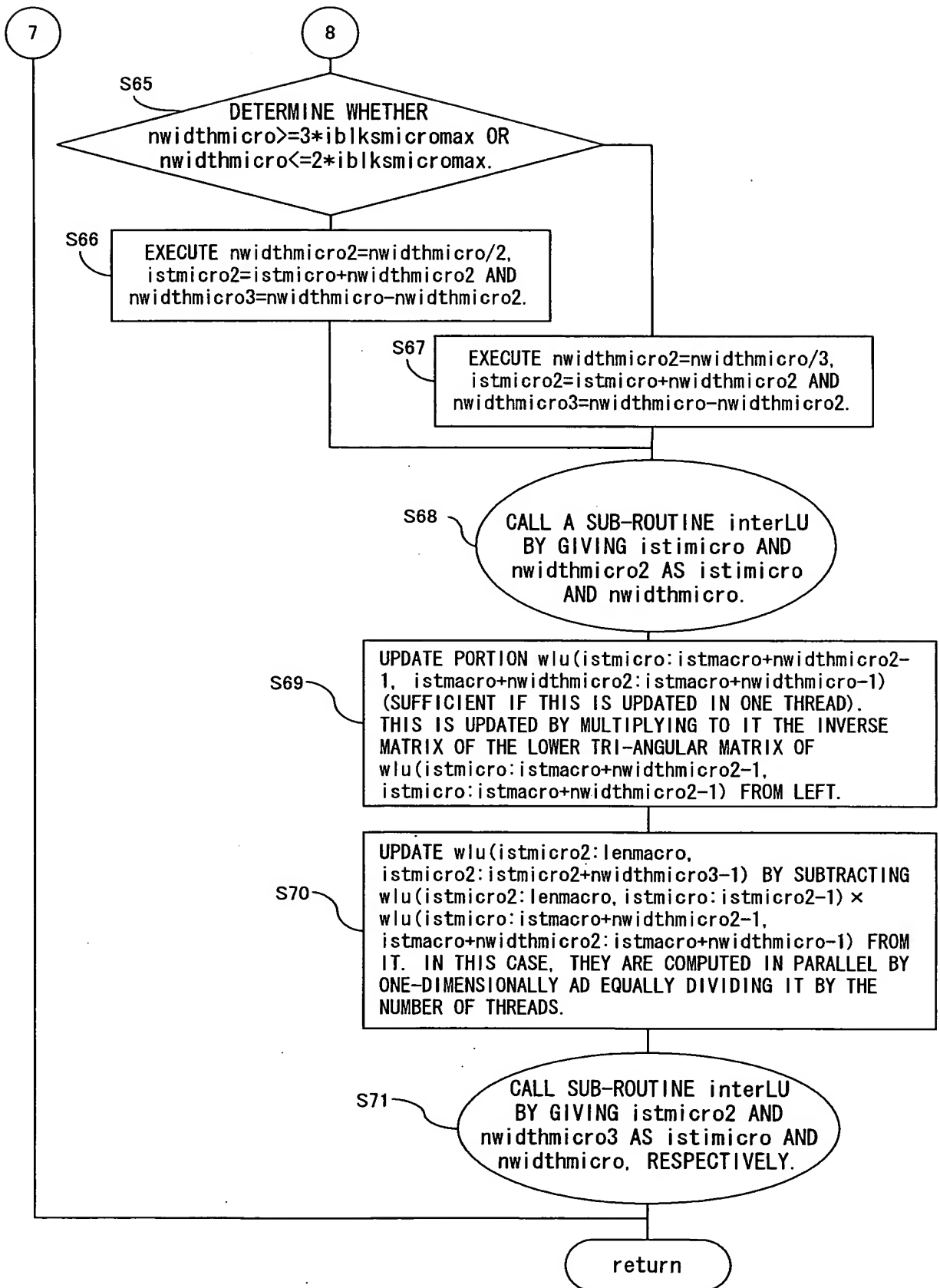


FIG. 18

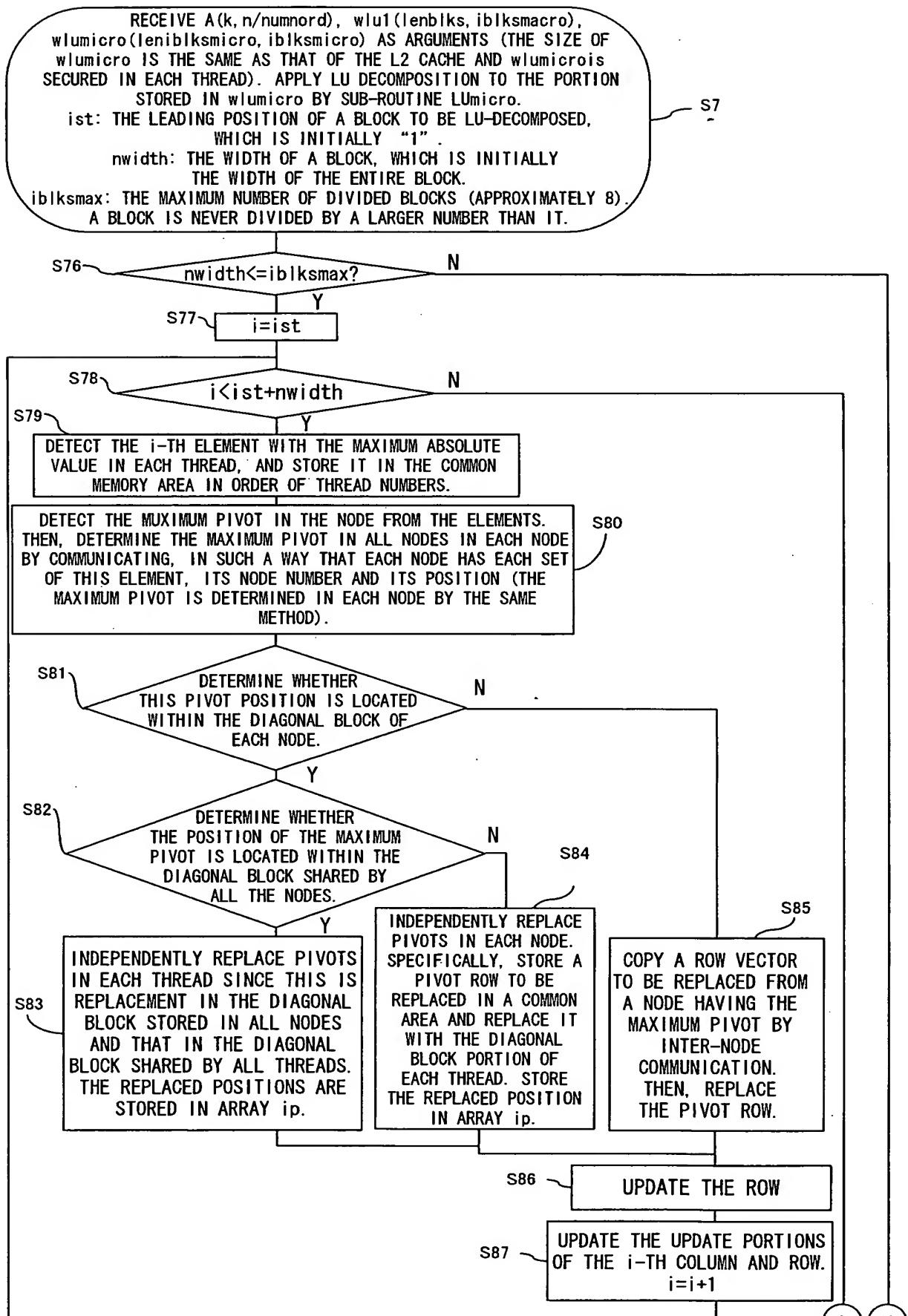


FIG. 19

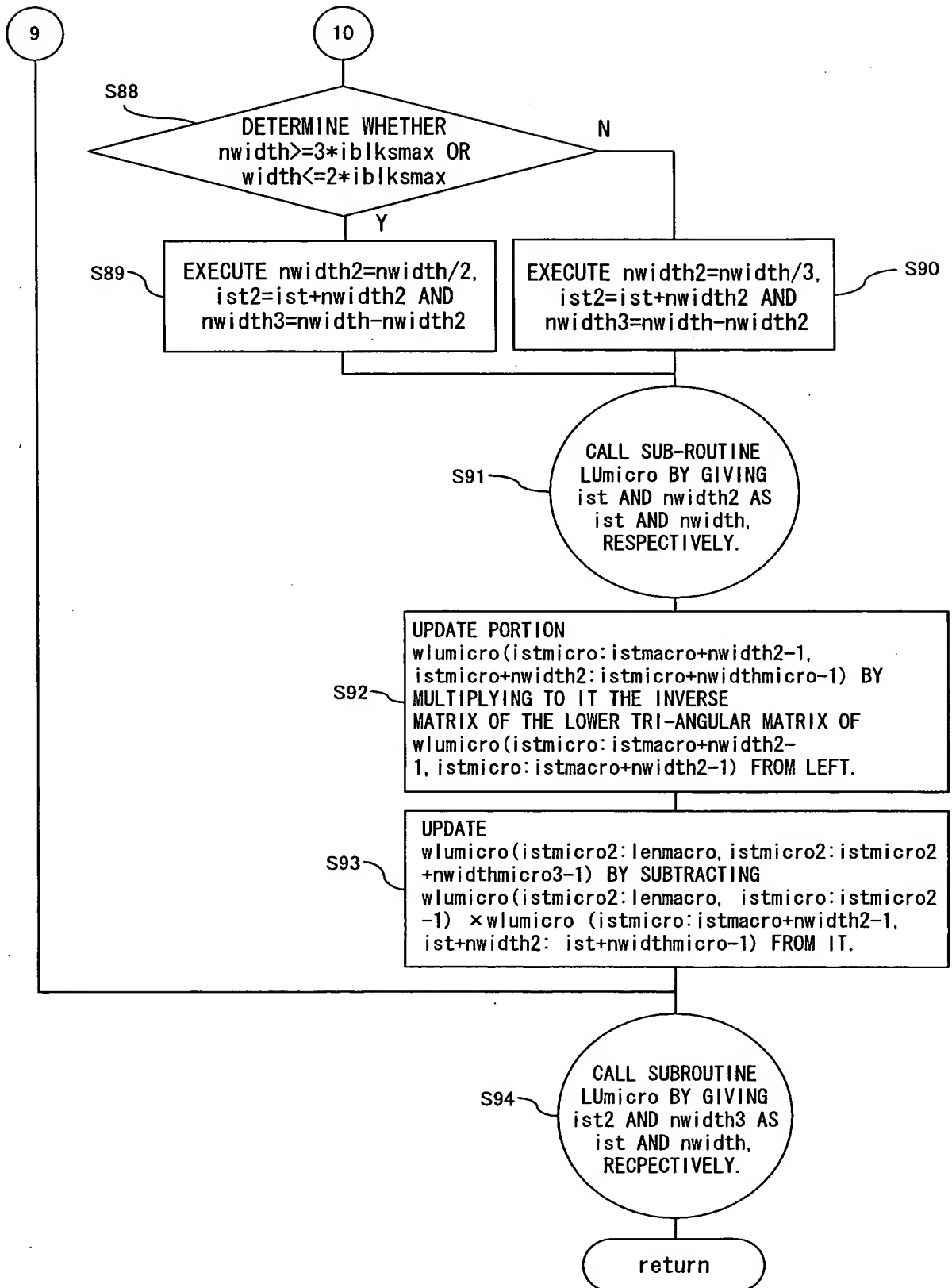
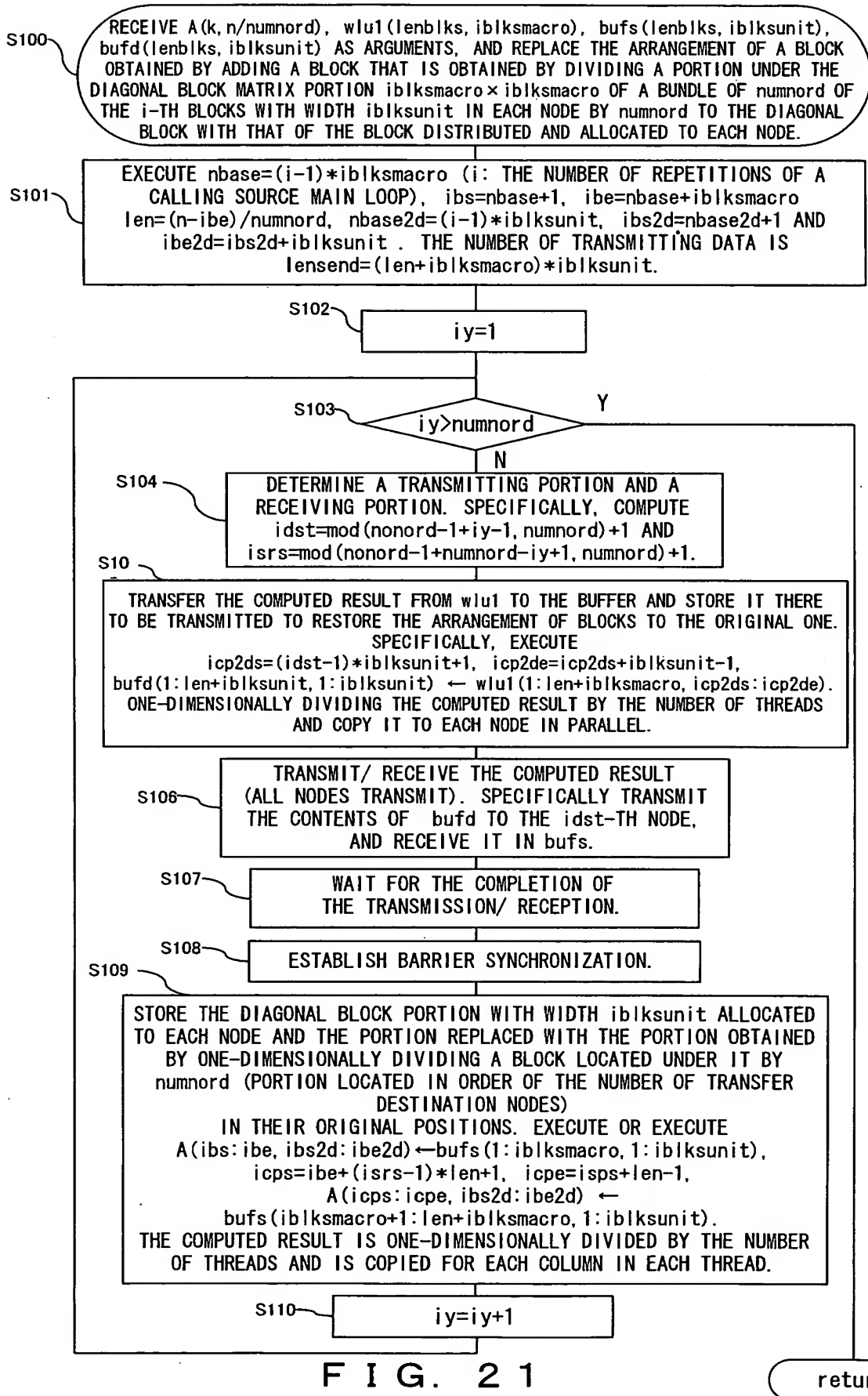


FIG. 20



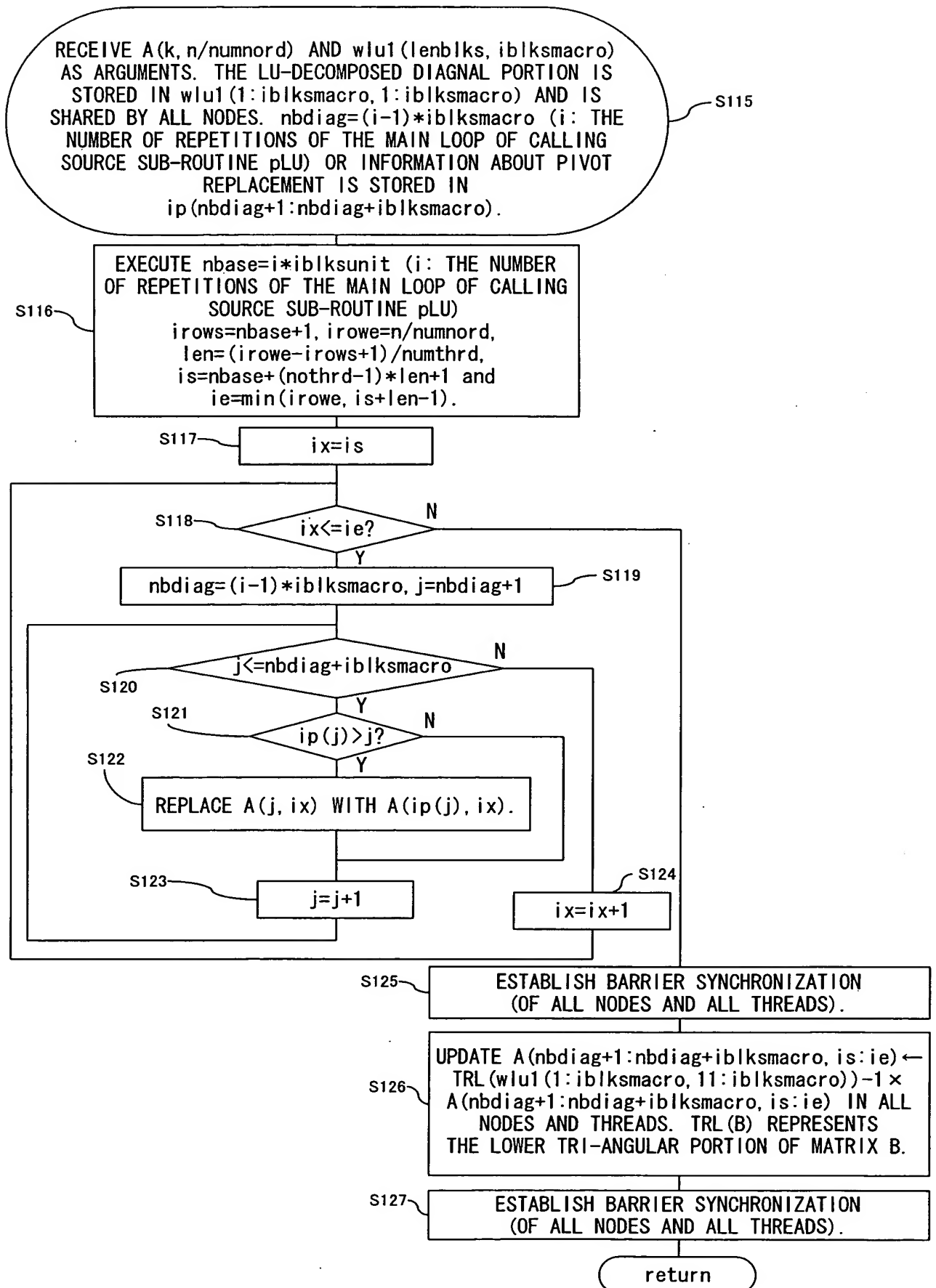


FIG. 22

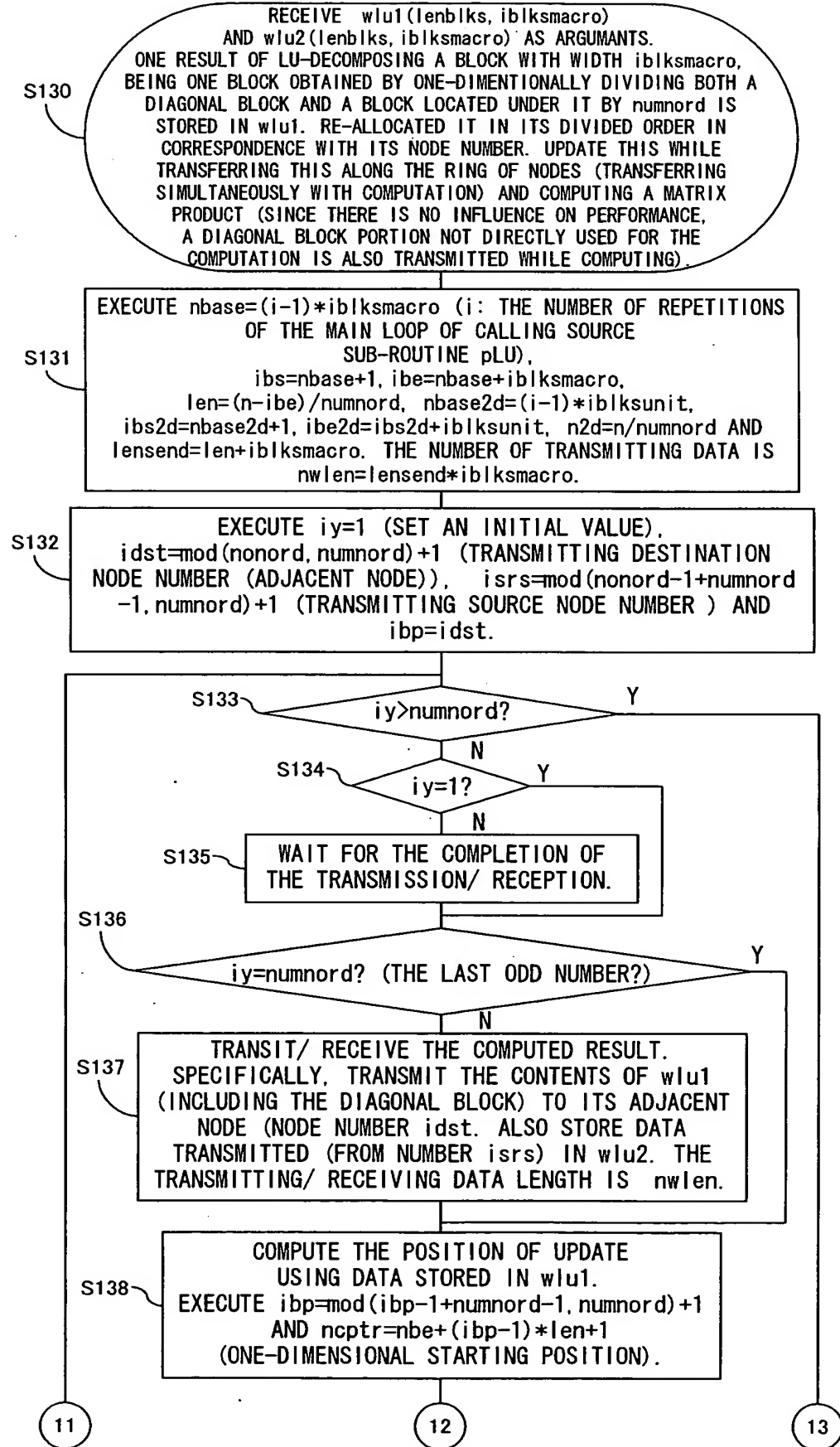


FIG. 23

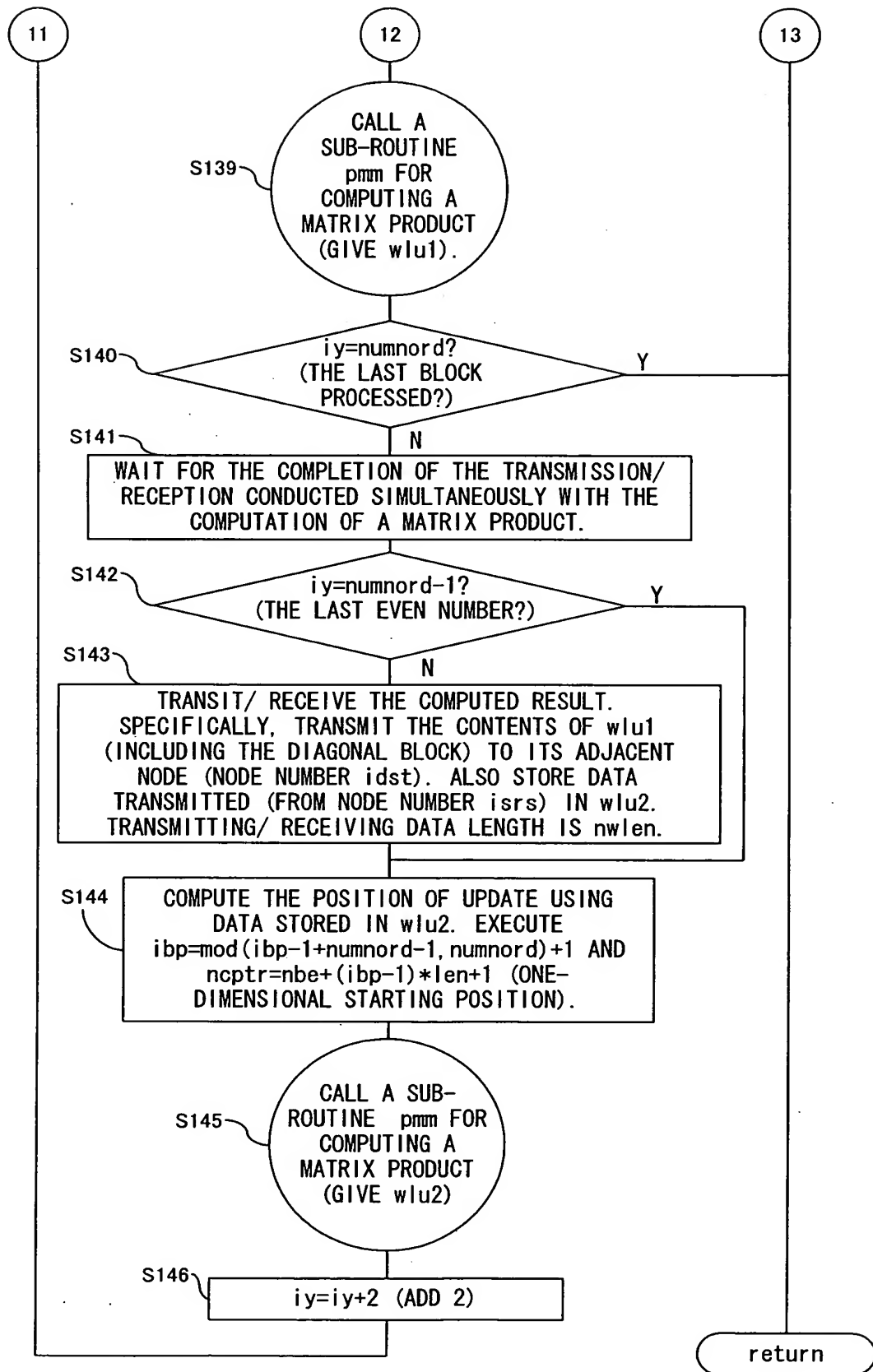


FIG. 24



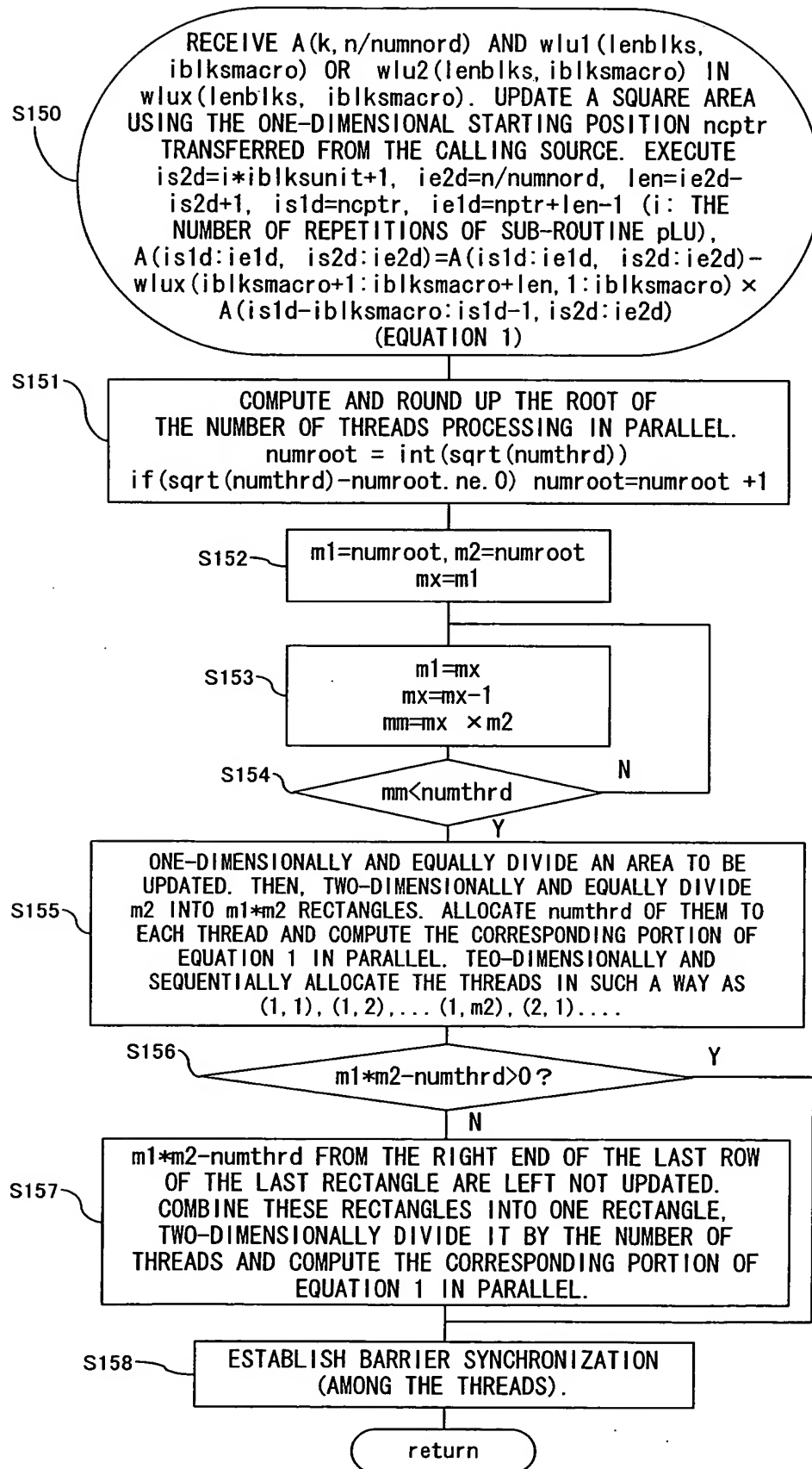


FIG. 25

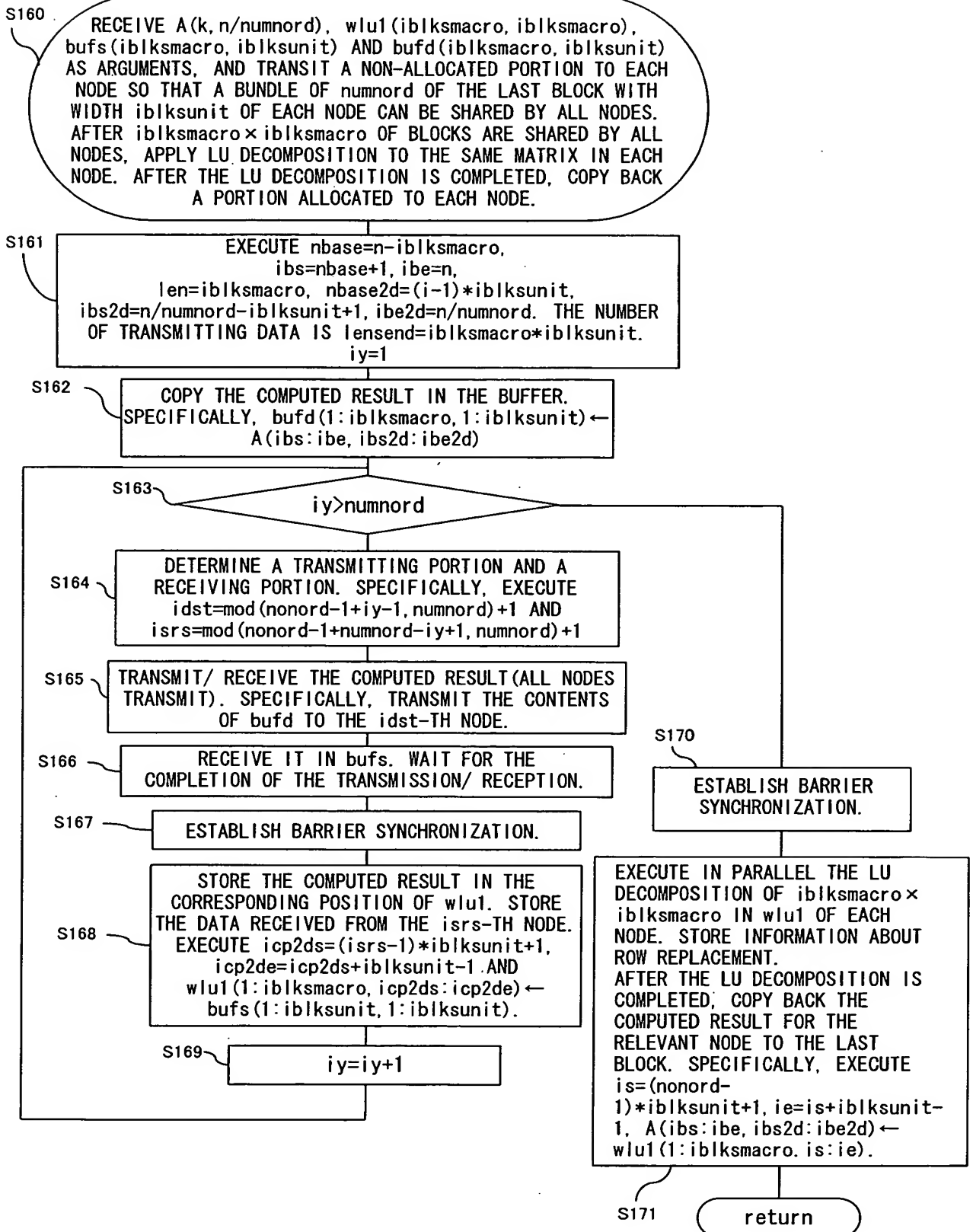


FIG. 26